United States Department of the Interior

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TAKE PRIDE IN AMERICA

In Reply Refer To:
3809 (110)
AZA-33353

September 8, 2006

NOTICE OF AVAILABILITY
Uranium Exploration on the Rock Mining Claims

Dear Interested Party:

Please be advised that an Environmental Assessment (EA) was prepared EA-AZ-110-06-0043 for the proposed Uranium Exploration on the Rock Mining Claims. This EA is a public document, and it is available for your review and comment.

The proposed action analyzed in the EA would allow Quaterra Resources, Inc., (Quaterra) to drill three to six core holes, from a maximum of three drill pads, on Rock #1 and Rock #2, (AMC 366091-2) unpatented lode mining claims in the NE¼ of Section 28, T. 39 N., R. 3 W, Mohave County, Arizona. A general location map is shown in Appendix 1, and a detailed location map is shown in Appendix 2, of the EA.

The drill holes would be located a few hundred feet away from Kanab Creek, at an elevation about 80 feet above Kanab Creek, in an area that is designated as closed to off-road vehicle use. Access into areas closed to off-road vehicle use is by foot, pack animal(s) or helicopter. A helicopter is proposed to transport the drill, equipment, supplies, fuel and personnel between a landing area on top of the canyon rim and the drill sites near Kanab Creek. The total surface disturbance associated with Quaterra's proposal, including the three drill sites, helicopter landing areas, water storage area, and equipment storage area is estimated to be 2.5 acres.

The No Action Alternative is not addressed in this environmental assessment. This is because the 43 CFR 3809 regulations significantly constrain the BLM's ability to do anything more than develop mitigations for a plan of operations sufficient to prevent the occurrence of unnecessary and undue degradation.

This proposed action is in conformance with the Arizona Strip Resource Management Plan (1992) and includes mitigation measures to protect archaeological, hydrological, environmental, and wildlife resources.

Copies of the EA are available upon request from, and written comments may be submitted to, Rody Cox, above address, (435) 688-3244, or email rody_cox@blm.gov. This EA has also been posted on the Arizona Strip Field Office's web home page http://www.blm.gov/az/asfo/index.htm. The deadline for receipt of comments is October 13, 2006. Public comments are welcome and encouraged.

By law, the names and addresses of those commenting are available for public review during regular business hours. However, individual commentors may request that their name and/or address be withheld from the record. These requests will be honored to the extent allowable by law. If you wish your name and/or address withheld, you must state this prominently at the beginning of your comment letter. All comments from organizations or businesses will be available for public inspection in their entirety.

Sincerely,

Becky J. Hammond
Field Manager

United States Department of the Interior
Bureau of Land Management

September 8, 2006

Environmental Assessment EA-AZ-110-06-0043

Environmental Assessment
Uranium Exploration on the Rock Mining Claims

Location: Arizona Strip Field Office, T. 39 N., R. 3 W., Sections 27 and 28.

Applicant/Address: Quaterra Resources, Inc., 1550 – 1185 West Georgia Street, Vancouver, British Columbia, Canada V6E 4E6

U.S. Department of the Interior
Bureau of Land Management

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Environmental Assessment
Uranium Exploration on the Rock Mining Claims

EA-AZ-110-06-0043

1.0 PURPOSE & NEED

1.1 Introduction:

This Environmental Assessment (EA) has been prepared to analyze Quaterra Resources, Inc.,'s (Quaterra) proposal to drill on the Rock #1 and #2 mining claims (AMC366091-2) located near Kanab Creek.

An EA analyzes potential impacts that could result with the implementation of a proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). A Decision Record (DR), which includes a FONSI statement, is a document that briefly presents the reasons why implementations of the proposed action will not result in "significant" environmental impacts (effects) beyond those already addressed in Arizona Strip District Resource Management Plan (1992). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the proposed action.

1.2 Background:

Quaterra proposes to drill three to six core holes on unpatented lode mining claims in the NE¼ of Section 28 in T. 39 N., R. 3 W, Mohave County, Arizona. The drill holes would be located a few hundred feet away from Kanab Creek, at an elevation about 80 feet higher than Kanab Creek in an area that is designated as closed to off-road vehicle use. If approved, drilling at this location would commence at the earliest feasible time. If a mineralized structure is located by the proposed action it is probable that a second phase of drilling would occur at some time in the near future.

1.3 Need for the Proposed Action

Quaterra is a Canadian Company searching for uranium deposits on the Arizona Strip. Their agents have staked mining claims on the Arizona Strip and Quaterra has obtained other limited interests in mining claims on the Arizona Strip staked by other parties. Exploratory drilling is a universally accepted method in mineral exploration and is commonly used to identify mineral resources and calculate economic reserves. The underlying need for the proposed action is for

Quaterra to find and develop mineralized ore bodies and commercially produce uranium (and/or other locatable minerals) from mining claims.

Mineral exploration and development is encouraged on public land in keeping with the Bureau's multiple-use mandate.

1.4 Purpose of the Proposed Action

BLM is considering approval of locatable mineral exploration by drilling on unpatented mining claims because the activity is an integral part of BLM's locatable minerals program. Mineral exploration is recognized as an appropriate use of public lands in the Arizona Strip Resource Management Plan, which provides management direction for locatable minerals.

1.5 Conformance with BLM Land Use Plans:

The proposed action described below is in conformance with the Arizona Strip District Resource Management Plan and Final Environmental Impact Statement (1992), as amended (1998); the Shivwits Resource Area Implementation Plan for the Arizona Strip District Approved Resource Management Plan (1992); and the Vermillion Resource Area Implementation Plan for the Arizona Strip District Approved Resource Management Plan (1992).

Table II-1 of the Resource Management Plan (RMP) provides the following management guidance: "Exploration and development of locatable mineral resources are provided for by the Mining Law of 1872, as amended. 43 CFR 3809 provides for mineral exploration and development while assuring that activities are conducted in a manner that prevents unnecessary or undue degradation, provides protection of non-mineral resources, and provides for reclamation of disturbed areas."

Table II-1 of the RMP contains the following decision, "Allow entire unit to remain open to mineral leasing, location, and sale except where restricted by wilderness designation, withdrawals, or specific areas identified in this plan."

Table II-1 of the RMP further states "2,570,200 acres would be open to mineral entry." (The recently designated National Monuments were included in the 2,570,200 acres and are now withdrawn from mining location, subject to valid existing rights.) Also, "Reclamation stipulations would be added to exploration and development plans directed toward maintaining naturalness and unique features and/or remoteness on the Arizona Strip. These stipulations would be applied to site-specific proposals. Plans of operations would be required in ACECs and areas closed to OHV."

The implementation plans for the Shivwits and Vermillion Resource Areas restate the above management guidance and decisions.

A Draft Resource Management Plan/Draft EIS for the Arizona Strip Field Office, the Vermilion Cliffs National Monument, and the BLM Portion of Grand Canyon-Parashant National

Monument, and a Draft General Management Plan/Draft EIS for the NPS Portion of the Grand Canyon-Parashant National Monument (November 2005) is in print (Volume 1 and 2).

During the current land-use planning process, lands surrounding and including the Kanab Creek projects sites have been identified as having wilderness characteristics, and those characteristics are currently being considered for management to maintain them. The proposed actions at the project sites may create short-term impacts on two out of three of these wilderness characteristics. The proposed action would temporarily diminish naturalness due to the presence of the drill, equipment, and supplies. Opportunities for solitude would be temporarily impacted due to the presence of personnel and a helicopter. Drilling operations could last from one to two months. These impacts would occur while operations are being conducted after which, and following reclamation, the wilderness characteristics of the area would be restored. In the long-term, these effects would be negligible. Therefore, the proposed action should not preclude future management consideration of these areas for maintaining wilderness characteristics. However, until a Record of Decision is signed for a new RMP, the area continues to be managed under the current RMP.

1.6 Relationship to Statutes, Regulations, or other Plans:

The proposed action is consistent with federal laws and regulations. Overall guidance on the management of mineral resources appears in the Domestic Minerals Program Extension Act of 1953, Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act of 1976, the National Materials and Minerals Policy, Research and Development Act of 1980, BLM's Mineral Resources Policy of May 29, 1984, and the Energy Policy Act of 2005.

Section 302 of the Federal Land Policy and Management Act of 1976 directs the Secretary to manage public lands under the principles of multiple use and sustained yield in accordance with land use plans developed under the act.

The regulations at 43 CFR 3809.11(c) states "You must submit a plan of operations for any operations causing surface disturbance greater than casual use in the following special status areas where § 3809.21 does not apply:

(1) Lands in the California Desert Conservation Area (CDCA) designated by the CDCA plan as "controlled" or "limited" use areas;
(2) Areas in the National Wild and Scenic Rivers System, and areas designated for potential addition to the system;
(3) Designated Areas of Critical Environmental Concern;
(4) Areas designated as part of the National Wilderness Preservation System and administered by BLM;
(5) Areas designated as "closed" to off-road vehicle use, as defined in § 8340.0-5 of this title;
(6) Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan; and
(7) National Monuments and National Conservation Areas administered by BLM."

The Arizona Department of Water Resources requires all operators to obtain authority to drill exploratory drill holes over 100 feet in depth and obtain abandonment authority prior to plugging the drill hole.

1.7 Identification of Issues:

The Proposed Action was considered and analyzed by an interdisciplinary team. This analysis has determined that the following critical elements of the human environment are not affected by the proposed action or are not present:

- Areas of Critical Environmental Concern
- Environmental Justice
- Farmlands (Prime or Unique)
- Threatened, Endangered or Candidate Plant Species
- Wild and Scenic Rivers (National Wild and Scenic Rivers Act)
- Wilderness (Statutory)

This analysis has determined that the following other resources and concerns are not affected by the proposed action or are not present:

- Rangeland Health Standards and Guidelines
- Woodland / Forestry
- Soils
- Paleontology
- Lands / Access
- Fuels / Fire Management
- Wild Horses and Burros

CRITICAL ELEMENTS

1.7.1 Air Quality:

- Slight increase in dust particulates from increased traffic on dirt and gravel roads.
- Slight increase in motor emissions due to the operation of internal combustion engines.

1.7.2 Cultural Resources:

- Cultural resources could be impacted including those eligible for the National Register of Historic Places.

1.7.3 Floodplains:

- Floodplains exist along sections of Kanab Creek and its tributaries.

1.7.4 Invasive, Non-native Species:

- Invasive, non-native species of plants occur in the area affected by the proposed action.

1.7.5 Native American Religious Concerns:

- The Kaibab Band of Paiute Indian Reservation is situated several miles north of the proposed action.
- Kanab Creek is a location of Native American Religious Concerns.

1.7.6 Threatened, Endangered or Candidate Animal Species:

- Southwest Willow flycatcher suitable and Spotted owl potential habitat occur in the area affected by the proposed action.

1.7.7 Wastes (hazardous or solid):

- Exploratory drilling for uranium could generate radioactive cuttings or drill core.
- Other solid waste would be generated by the proposed action.

1.7.8 Water Quality (drinking/ground):

- It is possible ground water could be encountered during exploratory drilling.

1.7.9 Wetlands/Riparian Zones:

- Wetlands and riparian areas exist along Kanab Creek.

OTHER RESOURCES/CONCERNS

1.7.10 Livestock Grazing:

- Livestock grazing could be impacted if gates were left open and fences cut.
- Exploratory drilling could encounter ground water that would allow water well development for livestock.

1.7.11 Vegetation:

- The proposed action could damage and kill some vegetation.
- Vegetation would be lost by the construction of drill pads.

1.7.12 Fish and Wildlife:

- Fish could be affected by water use from Kanab Creek or any discharges into the creek.
- Exploration activities would temporarily displace wildlife.
- Wildlife habitat would be temporarily lost by the construction of drill pads.

1.7.13 Recreation:

- Recreational opportunities for solitude would be negatively impacted while exploration related activities are being conducted.
- Road maintenance would be required in certain locations to allow access. This could provide the benefit of improved access to these areas for some types of recreation.

1.7.14 Visual Resources:

- Exploratory drilling operations would affect visual resources while drilling related activities are being conducted.

- Visual resources would be affected until reclamation is complete, minor visual impacts could result from the reclamation of drill pads.

1.7.15 Geology/Mineral Resources/Energy Production:

- Uranium exploration would result in an increase of information and knowledge regarding geology and mineral resources. Long term benefits for energy production could result if uranium ore bodies are discovered.

1.7.16 Socio-economics:

- Minor socio-economic benefits could result from uranium exploration. Locally, some employment opportunities could arise from exploration related activities.

1.7.17 Wilderness Characteristics:

- Areas inventoried with wilderness characteristics occur at the drill site proposed near Kanab Creek.

1.8 Summary:

This chapter has presented the Purpose and Need the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has developed mitigations to minimize potential impacts. The potential impacts or consequences resulting from the implementation of proposed action, as mitigated, are then analyzed in Chapter 4 for each of the identified issues.

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 Introduction:

Quaterra has submitted a plan of operation that proposes to drill on mining claims near Kanab Creek. Quaterra has also submitted notice level drilling operations on nine other claim groups on lands administered by the Arizona Strip Field Office (ASFO). The drill targets are breccia pipe type deposits. Breccia pipe uranium deposits that were developed into mines exist in the vicinity of the proposed action.

Exploratory drilling is a universally accepted method in mineral exploration and is commonly used to identify mineral resources and calculate economic reserves. The proposed action and mitigation presented in this EA are intended to allow Quaterra to exercise their rights under the 1872 Mining Law, as amended, while protecting natural resources.

2.2 Proposed Action:

Quaterra proposes to drill three to six core holes, from a maximum of three drill pads, on Rock #1 and Rock #2, (AMC 366091-2) unpatented lode mining claims in the NE¼ of Section 28, T. 39 N., R. 3 W, Mohave County, Arizona. A general location map is shown in Appendix 1. The drill holes would be located a few hundred feet away from Kanab Creek, at an

elevation about 80 feet above Kanab Creek, in an area that is designated as closed to off-road vehicle use. Access into areas closed to off-road vehicle use is by foot, pack animal(s) or helicopter. A helicopter is proposed to transport the drill, equipment, supplies, fuel and personnel between a landing area on top of the canyon rim and the drill sites near Kanab Creek. A detailed location map is shown in Appendix 2. All workers on this project would stay in town, and would return to town at the end of their work shift each day.

Access from Fredonia to the helicopter landing area on top of the canyon would be along the White Sage Flat road (U.S. Forest Service Road 22) to the Gunsight Point Road (BLM Road 1048). A secondary gravel road forks off of the Gunsight Point Road in the NE¼ of Section 31, T. 39 N., R. 2 W., and would be used to drive to the helicopter landing area in the NE¼ of Section 27, T. 39 N., R. 3 W. This road would need to be graded in many places throughout its length to accommodate the vehicles that would carry the drill, equipment, supplies, fuel and personnel.

The operator has proposed to have trash containers on site where refuse, garbage, small discarded parts, oil cans, empty sacks, grease tubes, etc… are to be deposited. These containers would be flown out when they are close to being full, or every 2-3 days, whichever comes first. The refuse would be taken to town and disposed of in a legal manner as soon as it was flown out. No refuse, liquid or solid, would be permitted to accumulate or be buried. Liquid refuse such as used oil, hydraulic fluid, antifreeze, contaminated water, or fuel would be placed in suitable containers and flown out. Any items which have outlived their usefulness, such as broken or worn out parts, empty fuel or oil drums, empty parts containers, etc… would be flown out promptly and not allowed to accumulate on site.

A portable toilet would be on site at all times. A local vendor would provide portable toilets rigged to be carried by helicopter, and to deliver newly serviced ones to the helicopter landing site and haul the ones requiring servicing back to town at appropriate intervals. It would be the responsibility of the operator to clean up and remove any human waste found anyplace outside of the portable toilet.

Drilling would be done seven days a week with either one or two 12 hour shifts per day. Working two shifts is preferable for a number of reasons related to increased operating efficiencies which lower operating costs. The choice between one or two shifts per day would depend largely on the time of the year when operations would be conducted. The helicopter would fly only during daylight hours, thus during the winter there may not be enough daylight hours to for the helicopter to fly in personnel to work two 12 hour shifts. Each hole would take approximately one week to drill with a crew of three or four personnel working one shift, 12 hours a day. If two shifts are used to drill 24 hours a day each hole would take approximately three to four days to complete.

The holes would be drilled to a depth of less than 1000 feet using water and a mixture of bentonite and polymer. Bentonite is a naturally occurring inert clay mineral, and drilling polymer is a non toxic biodegradable organic compound. Approximately 1400 gallons (186 cubic feet) would be needed initially to mix the drill fluid. Additional water in the amounts of a few hundred gallons may be needed from time to time if circulation is lost due to fractures or

voids in the rock. This would occur over a maximum period of six weeks. The water would be pumped from the creek to a lined pit or water tank, using a small portable pump at a maximum rate of 20 gallons per minute (approximately 0.05 cubic feet per second or cfs).

If water flow in Kanab Creek falls below 0.5 cfs the water would be trucked in from Fredonia to the closest access road near the helicopter landing area approximately one mile east of the drill site. A helicopter could fly water into the drill site. Alternatively a water pipeline constructed from rolls of plastic pipe could be used to transport the water to the drill site.

The pipe would be put in place by hand, and the sections fastened together by hand. No equipment access would be needed. The pipe would be routed around boulders or other natural obstructions. A few rocks might be moved by hand to allow the pipe to lay flat on the ground. In the section which traverses the steep part of the canyon the pipeline would have to be anchored to prevent it from sliding down the slope. This would be accomplished by attaching it to boulders, outcrop, or metal stakes driven in the ground. At the termination of the project the pipeline and anything related to it would be removed.

The water and drill fluid would be contained in a pit lined with a heavy plastic sheet. A pit 10 feet square and 4 feet deep would contain 1400 gallons (186 cubic feet) of water plus have adequate freeboard and allowance for settled cuttings. The pit would be hand dug using local labor prior to flying in the drill rig. One or more 400-500 gallon cattle tanks might also be used to store water and/or drill fluid near the drill site.

This method of drilling produces drill core or cylindrical pieces of rock extracted from the rocks being drilled. Occasionally some of the drill core is not recovered or more commonly the recovery of drill core is less than 100% due to voids and fracture zones in the formation or technical difficulties during drilling. Fine cutting are generated by this process and are carried to the surface in the drill fluid. Occasionally the drilling fluid becomes loaded with abrasive drill cuttings and must be replaced. The used drilling fluid would be flown out and disposed of in a legally approved manner. The rock core samples are placed in core boxes, split and samples collected for assay. Core samples would be flown out every day or two using the same trips which bring personnel and supplies in. The core would be taken to town immediately and stored.

After drilling operations are completed the cuttings would be allowed to dry and placed back into the drill holes. Temporary plugs would be placed in the drill holes while waiting for the cuttings to dry. After placing the cuttings back into the drill holes the drill holes would be plugged in accordance with Arizona State requirements. The plastic liner would be removed and the pit would be filled in by hand. A scintillometer (an instrument used to measure radiation) survey would be run to be sure no cuttings containing uranium were left on the ground. Any excess cuttings not containing uranium would be raked out into a thin layer and blended with the surrounding soils to minimize visual contrast. Then the disturbed ground would be hand graded to a natural appearing contour and seeded with a BLM prescribed mixture.

The total surface disturbance associated with Quaterra's proposal, including the three drill sites, helicopter landing areas, staging area, pipeline, water storage area, and equipment storage area is estimated to be 2.5 acres.

In the state of Arizona, the Arizona Department of Water Resources (ADWR) requires if exploratory drill holes over 100 feet in depth are proposed, then the operator must file a notice of intent with ADWR, obtain authority to drill the proposed hole and have a permit (drill card) issued to a licensed driller. Subsequent abandonment requires the operator to obtain abandonment authority from ADWR by filing a notice of intention to abandon a well. If the requirements are met ADWR issues a well abandonment authorization card to the drilling contractor who may then plug and abandon the drill hole. Within 30 days after a well is abandoned, the operator is required to file a Well Owner's Notification of Abandonment; and the well drilling contractor is required to file a Well Abandonment Completion Report with ADWR.

2.5 No Action:

The No Action Alternative is not addressed in this environmental assessment. This is because the 43 CFR 3809 regulations significantly constrain the BLM's ability to do anything more than develop mitigations for a plan of operations sufficient to prevent the occurrence of unnecessary and undue degradation.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

The Proposed Action was considered and analyzed by an interdisciplinary team. This analysis has determined that the following critical elements of the human environment are not affected by the proposed action or are not present:

- Areas of Critical Environmental Concern
- Environmental Justice
- Farmlands (Prime or Unique)
- Threatened, Endangered or Candidate Plant Species
- Wild and Scenic Rivers (National Wild and Scenic Rivers Act)
- Wilderness (Statutory)

This analysis has determined that the following other resources and concerns are not affected by the proposed action or are not present:

- Rangeland Health Standards and Guidelines
- Woodland / Forestry
- Soils
- Paleontology
- Lands / Access
- Fuels / Fire Management
- Wild Horses and Burros

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

The affected environment is tiered to the Arizona Strip District Resource Management Plan and Environmental Impact Statement (1992), Affected Environment pages III-1 to III-58.

3.2 General Setting:

The proposed drill sites are approximately 5.25 miles south of the Kaibab-Paiute Indian Reservation near Kanab Creek in Mohave County (at this location Kanab Creek is the border between Mohave and Coconino Counties). The location is approximately fourteen miles southwest of the town of Fredonia, in Coconino County and about twenty seven miles southeast of Colorado City. Colorado City has a population of approximately 4,000, while Fredonia's population is about 1,000. Appendix 1 is a general location map showing the approximate location of the proposed drill holes.

3.2.1. Physiography

The proposed drill sites are on the northeast portion of the Kanab Plateau within the Grand Canyon Section of the Colorado Plateau Physiographic Province. The Kanab Plateau is bounded by the Toroweap Fault to the west and the Mauv Canyon Fault Zone to the east. The Colorado Plateau Physiographic Province is characterized by predominantly sedimentary rock exposures with a regular, gently dipping surface. On the Kanab Plateau, northerly trending normal faults, down thrown to the west, dominate the structural setting.

3.2.2 Topography and Soils

Above the canyons rim the topography is mostly gentle, interspersed with occasional more moderate hills. Locally, elevations generally range between 4,500 and 5,000 feet. In the canyons of Kanab Creek and its tributaries the topography is very steep with near vertical cliff forming rocks separated by slope forming units. Elevations at the bottom of the canyons are around 4,000 feet. From top of the rim to the bottom of the canyon the change in elevation may be as much as 1,000 feet over a horizontal distance of half a mile.

The soil at the proposed drill sites is rocky, well drained and somewhat excessively drained, steep to very steep, slightly to moderately susceptible to wind and water erosion and has low to medium productivity. The parent material is gypsifereous siltstone, silty sandstone and limestone of the Toroweap Formation and the soil type is Rock Outcrop-Torriorthents (Soil Survey of Mohave County Area, Arizona, Northeastern Part, and Part of Coconino County, United States Department of Agriculture, 1992).

3.2.3 Climate

The climate at this locality is semiarid, with occasional monsoonal moisture, characterized by moderate daily and annual ranges in temperature. Winters are mild and summers are hot. Spring and fall weather is variable from year to year and may exhibit extended fair mild weather or rain and snow storms. The average annual temperature ranges is estimated to be around 55° F., and transitory extremes are about 105° F., and 20° F. Average annual precipitation is 10 to 14 inches of which, normally 15% comes in the fall, 27% comes in the winter, 22% comes in the spring, and 36% comes in the summer.

3.2.4 Historical Uses

Historical uses of the area near the proposed drill sites include, livestock grazing, mineral exploration, and recreation (horseback riding, hiking, camping, hunting, rock collecting, photography bird watching and nature study).

3.3 Resources/Issues Brought Forward for Analysis:

CRITICAL ELEMENTS

3.3.1 Air Quality:

Air quality in the general area is good with no industrial emissions or large volumes of highway traffic near the area. The major local nonpoint sources of air emissions are vehicles, which emit carbon monoxide and create fugitive dust on the dirt roads. Air quality in the area is designated Class II under the Prevention of Significant Deterioration Regulations as mandated by the National Ambient Air Quality Standards as defined by the Clean Air Act. The proposed action with mitigation is consistent with the Class II classification because there would be no significant deterioration in air quality in the area.

3.3.2 Cultural Resources:

The cultural resources along Kanab Creek represent a variety of site types, cultures, and time periods. Various cultural groups occupied this area over a range of time periods, from at least 12,000 years ago to the present day. There are no known archaeological sites or resources at the proposed drill sites.

3.3.3 Floodplains:

Kanab Creek is a seasonally flowing stream with well developed floodplains.

3.3.4 Invasive, Non-native Species:

Currently there are no invasive, non-native species near the drill sites but Russian thistle and tamarisk are known to be in the area.

3.3.5 Native American Religious Concerns:

American Indian groups either currently or historically living in the area have cultural ties to the area. American Indians consider traditional cultural properties, power places, sacred sites, and many natural resources to be inextricably linked to parts of an ecosystem. Today, the Kaibab Paiute tribe is the only Southern Paiute band with reservation lands remaining on the Arizona Strip. Their reservation lands are situated approximately 5.25 miles north of the proposed drill sites.

Kanab Creek is an important cultural, traditional, and sacred area to the Southern Paiutes. Kanab Creek was a frequently used water source; as such it was known to the Paiute people as "Kanare'uipi" which means "Willow Canyon." Kanab Creek is named for the willows (kanav) that used to be prevalent on its banks before damming upstream restricted the flow of water through the creek bed. Water has always meant survival. In traditional Paiute belief, water is both the giver of life and the taker of life. Water creates all things and brings life to all things. It is to be trusted, but it is also to be feared and respected. Water in the form of streams, tributaries, and springs connects all places on the Arizona Strip to each other, and to the sacred Colorado River and the Grand Canyon. Water has a central place in Paiute spiritual understanding and is, therefore important to the Paiutes.

Kanab Creek also contains prehistoric structural sites, rock shelters, and rock art which are considered sacred to the Hopi people. At least seventeen Hopi tribes have oral histories placing them on the Arizona Strip at one time or another during their travels to their current homeland on the Hopi Reservation.

3.3.6 Threatened, Endangered or Candidate Animal Species:

There are 17 special status animals that are known to occur or have the potential to occur at or near the proposed drill sites, including 7 bird species, 6 mammals, 2 reptiles, and 2 fish. Special status species include those federally listed as threatened or endangered under the Endangered Species Act (ESA), those proposed or candidates for federal listing, Arizona Game and Fish Department (AGFD) Wildlife Species of Concern (WSC), and those species identified by the BLM State Director as sensitive (S) or rare. The USFWS classifies species status as being, listed endangered (LE), listed threatened (LT), candidate (C), signed conservation agreement (CA), species of concern (SC), experimental nonessential population (XN), and designated critical habitat (CH).

Bald eagles (*Haliaeetus leucocephalus*) USFWS LT, AGFD WSC, are considered rare winter visitors;

Mexican spotted owls (*Strix occidentalis lucida*) USFWS LT, AGFD WSC, have been known to nest in rocky canyons with steep walls similar to the proposed drill sites. Four surveys for spotted owls were completed between May and July, 2006, in accordance with established protocols to evaluate use of the habitat by owls, determine potential effects from the proposed project, and validate the computer model. No owls were observed or detected during any of the surveys. In addition, members of the survey team indicated that the site was open and exposed, making it low quality habitat for owls. The west facing canyon wall at Rock Canyon Point includes an isolated area identified as potential nesting habitat for Mexican spotted owls by a

computer generated model. The cliff habitat in this area is approximately 300 yards due east of the proposed drill sites.

California condors (*Gymnogyps californianus*) USFWS LE/XN, roost on the rock cliffs of the Paria Plateau and individual birds may travel long-distances to find sufficient food.

Peregrine falcons (*Falco peregrinus anatum*) USFWS SC, AGFD WSC, have been documented within Kanab Canyon, Hack Canyon, near Fredonia and may be yearlong residents.

Northern goshawks (*Accipiter gentilis apache*) USFWS SC, AGFD WSC, nest in coniferous forests and will winter in lower elevations in forested areas.

Ferruginous hawks *(Buteo regalis)* USFWS SC, AGFD WSC, occur in semiarid grasslands with scattered trees, rocky mounds or outcrops, and shallow canyons that overlook open valleys.

Southwestern willow flycatchers (*Empidonax traillii extimus*) USFWS LE, AGFD WSC, prefer dense canopy cover, a large volume of foliage, and surface water during midsummer. Approximately 500 yards upstream from the proposed drill site is an area of dense riparian habitat considered by BLM to be suitable for southwestern willow flycatchers. The site includes native cottonwood and willow areas, as well as tamarisk. Two assessment surveys for willow flycatchers were conducted in this eight acre riparian patch during June 2006. No willow flycatchers were positively identified. On both visits a flycatcher was seen that did not vocalize, making positive identification very difficult. This was most likely an ash- throated flycatcher (*Myiarchus cinerascens*) but could possibly have been a southwestern willow flycatcher. While two survey visits is not in accordance with accepted protocols for southwestern willow flycatcher surveys, previous surveys for willow flycatchers were conducted in 2001, 2002, and 2003 that were in accordance protocols. No flycatchers were detected during any of these surveys, though the habitat is suitable and among the highest quality of any habitat available to the species on the Arizona Strip.

Of these species, only peregrine falcons have been observed in the area of the proposed drill sites.

The special status mammal species known from this area are bats. The spotted bat (*Euderma maculatum*) USFW SC, AGFD WSC, BLM S; Allen's big-eared bat (*Idionycteris phyllotis*) USFW SC, BLM S; small-footed myotis bat (*Myotis ciliolabrum*) USFW SC, BLM S; long-eared myotis bat (*Myotis evotis*) USFW SC, BLM S; fringed myotis bat (*Myotis thysanodes*) USFW SC, BLM S; long-legged myotis bat (*Myotis volans*) USFW SC, BLM S; and big free-tailed bat (*Nyctinomops macrotis*) USFW SC, BLM S. No bat surveys have been conducted within Kanab Creek, but the probability of occurrence of all of these species is considered high due to the presence of desirable habitat characteristics.

The two species of reptiles are chuckwalla (*Sauromalus obesus*) BLM S and northern sagebrush lizard (*Sceloporus graciosus graciosusI*) BLM S. No surveys for these species have been conducted for these species within the area of the proposed action, but the probability of occurrence of either species is considered low.

The two species of fish are desert sucker (*Catostomus clarki*) USFW SC, BLM S and speckled dace (*Rhinichthys osculus*) USFW SC, BLM S. The area of the proposed action does not include any flowing water on the surface except during periods of flooding. No surveys for these species have been conducted within the area of the proposed action, but casual observations of both species have been recorded upstream at Clearwater Springs.

3.3.7 Wastes (hazardous or solid):

There are no known hazardous or solid wastes near the proposed drill sites.

3.3.8 Water Quality (drinking/ground):

There are 2 wells used to water livestock within a five mile radius of the proposed drill holes. One was drilled into shallow (30 feet depth), small, perched aquifer and the source of recharge is probably from runoff into the alluvium of usually dry washes after large precipitation events. The other well encountered ground water at 650 feet below the surface in a permeable rock layer. Groundwater in the area is generally high in salinity and commonly does not meet state drinking water standards.

Previously exploratory drilling for uranium on the Uinkaret Plateau revealed a possible deep regional groundwater table, most of which is deeper than 2,500 feet below the surface in the Redwall/Muav limestone contact.

3.3.9 Wetlands/Riparian Zones:

Riparian areas are a form of transition between permanently saturated areas and upland areas with visible vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Ephemeral streams or washes that do not exhibit the presence of vegetation that is dependent upon free water in the soil are not considered riparian areas.

Riparian vegetation occurs along portions of Kanab Creek, including the portion of the creek near the proposed drill sites. Kanab Creek enters from Utah and flows for 19 miles across state, private lands, and the Kaibab Indian Reservation, then through 22 miles of the Arizona Strip FO. Upstream users in Utah reduce flows for municipal and irrigation purposes, leaving it almost dry in the summer.

Clear Water Spring is located approximately one mile upstream of the proposed drill sites near Kanab Creek. Below the point where Clear Water Spring flows into Kanab Creek there is a short stretch of less than 0.5 miles where water flow in the creek much of the year. The Kanab Creek riparian ecological zones are currently in properly functioning condition.

OTHER RESOURCES/CONCERNS

3.3.10 Livestock Grazing:

The proposed drill sites are within the Kanab Creek Grazing Allotment. The grazing allotment encompasses 6,586 acres, with 66% Public Lands and contains a total of 240 AUMs. About half the allotment is inaccessible to livestock because of steep slopes. The allotment is managed as a Custodial allotment to protect resource conditions and values. It is grazed under the Winter Spring grazing system where not more than 37 cattle are grazed between October 16th and May 1st.

3.3.11 Vegetation:

The proposed drill holes near Kanab Creek are located on upland vegetation above the influence of the Kanab Creek riparian ecological zone. The vegetation in the area consists of grasslands with nearby sagebrush communities. Most of the vegetation is of annual grasses consisting of red brome and cheatgrass. Minor amounts of perennial grasses include Indian ricegrass, sand dropseed, blue grama and black grama. Occasional shrubs include fourwing saltbush, rabbitbrush and snakeweed. Russian thistle is prevalent and tamarisks are present along the creek.

3.3.12 Fish and Wildlife:

No formal fish surveys have been completed in the Kanab Creek drainage, though desert sucker, speckled dace, green sunfish have been observed during casual observations. Other fish species, including non-natives, likely occur in the area.

The usual array of desert animals is found at or near the proposed drill sites. The smaller species such as rodents, reptiles and birds predominate, while mule deer and coyote are common.

The proposed drill sites and nearby surrounding areas have been identified as being poor quality habitat for antelope and winter critical habitat for mule deer. It is also important habitat for bighorn sheep, which are found near the canyon rims and in the canyons.
Raptors occur in the area, especially around the canyon rims and cliffs that form the canyon walls. In winter, the area supports a greater abundance and a wider variety of raptors than in summer months.

3.3.13 Recreation: In general, proposed drill sites and nearby surrounding areas provides opportunities for dispersed recreation activities that depend on values such as, colorful geology, scenic view sheds, remoteness and solitude. Recreation activities include; horseback riding, hiking, camping, hunting, rock collecting, photography bird watching and nature study in semi-primitive motorized to semi-primitive non-motorized recreation settings. Visitors typically enjoy experiences that are challenging, self-directed, and remote.

3.3.14 Visual Resources: The proposed drill sites are within a Visual Resource Management (VRM) Class II corridor, which is associated with the scenic quality of the canyon carved by Kanab Creek. VRM Class II is defined as follows: Changes to the landform, vegetation or structures should be done very subtly. Proposed changes may be seen, but should not attract attention, as viewed from selected key observation points.

3.3.15 Geology/Mineral Resources/Energy Production:

In the vicinity of the proposed drill holes the geologic exposures on top of the plateaus are dominated by the Moenkopi Formation (Triassic) and the Kaibab Limestone (Lower Permian), which forms the rims of the canyons. While the steep walled canyons of Kanab Creek and its tributaries expose the Toroweap Formation (Lower Permian) below the Kaibab Limestone. Farther downstream, away from the proposed drill sites, the Coconino Sandstone (Lower Permian) and Hermit Formation (Lower Permian) are exposed below the Toroweap Formation. Quaternary alluvial deposits and terraces are deposited along Kanab Creek.

Mineral resources in the area are primarily associated with breccia pipes, which have been the major focus of uranium exploration and development. Breccia pipes developed from solution collapse within the thick Mississippian Redwall Limestone and propagated upward into overlying strata of carbonate-cemented sandstone, siltstone, limestone, and conglomerate for at least 3,000 feet. Stoping was intermittently active and reached the lower members of the Chinle Formation in Late Triassic time. A generalized cross section of a breccia pipe is shown in Appendix 3.

Exploration since the late 1970`s has resulted in the discovery of numerous uranium deposits and the construction of six uranium mines (Hack Canyon Mine was three separate deposits, Hermit Mine, Pigeon Mine, Arizona 1 Mine, Pinenut Mine and Kanab North Mine) on lands administered by the Arizona Strip Field Office. Uraninite is the primary uranium mineral and occurs in the matrix and, to a lesser degree, in clasts within breccia. It occurs in association with copper, arsenic, nickel, lead, zinc and silver. Uranium is the only mineral resource presently known to occur in economic quantities in these deposits.

Through 1990, when mining for uranium on the Arizona Strip Field Office ceased, production had totaled 1.472 million tons of ore with an average grade of 0.647% $U_3 0_8$ containing 19.04 million pounds of $U_3 0_8$. Currently three of the mines (Arizona 1 Mine, Pinenut Mine and Kanab North Mine) are in "stand by" mode and the other three mines have been closed and reclaimed. The proven reserves in the remaining deposits are estimated at 190,000 tones of ore with an average grade of 0.522% U_3O_8 containing 1.98 million pounds of $U_3 0_8$. Most of the primary ore is below the Coconino Sandstone and at the level of the Hermit Shale and the Esplanade Sandstone of the Supai Group. Presently, there is no uranium production from the ASFO.

3.3.16 Socio-economics:

The community of Fredonia is approximately fourteen miles northeast of the proposed drill sites, in Coconino County. Uranium exploration presently authorized under notices of intent is having a minor positive economic impact to the community.

3.3.17 Wilderness Characteristics:

Wilderness Characteristics as identified in BLM, Washington Office, Instruction Memorandum (IM) 2003-275, Attachment 1, are naturalness, solitude, and primitive recreation:

• Naturalness: Lands and resources exhibit a high degree of naturalness, are affected primarily by the forces of nature, and are areas where the imprint of human activity is substantially unnoticeable. The BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences and other improvements, the nature and extent of landscape modifications, the presence of native vegetation communities, and the connectivity of habitats.

• Outstanding Opportunities for Solitude: Visitors may have outstanding opportunities for solitude […] when the sights, sounds, and evidence of other people are rare or infrequent [and] where visitors can be isolated, alone, or secluded from others.

• Outstanding Opportunities for a Primitive and Unconfined Type of Recreation: Visitors may have outstanding opportunities for primitive and unconfined types of recreation […] where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.

The proposed drill sites near Kanab Creek and surrounding areas have been assessed and found to possess wilderness characteristics.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction:

This chapter analyzes the impacts of the proposed action to those resources described in the affected environment chapter 3, above.

Only impacts that may result from implementing the proposed action are described in this EA. If an ecological component is not discussed, it is because BLM resource specialists have considered effects to the component and found the proposed action would have minimal or no effects.

General effects from projects similar to the proposed action are also described in the document to which this EA is tiered. The environmental impacts are tiered to the RMP, Appendix 28, Impacts from Reasonably Foreseeable Locatable Mineral Resource Exploration and Development (Reasonably Foreseeable Development Scenario).

4.2 Direct/Indirect Impacts:

4.2.1 Proposed Action:

CRITICAL ELEMENTS

4.2.1.1 Air Quality:

The construction of the drill sites, maintaining the existing access roads, and mobilization of crews during drilling operations would generate fugitive dust locally. Internal combustion engines such as those on the drill, vehicles and helicopter would create a slight addition of motor emissions to the air. Overall impacts to air quality would be localized and short term.

4.2.1.2 Cultural Resources:

Cultural surveys conducted between December 12th and 15th, 2005, determined that no cultural resources exist at the proposed drill sites. Previous surveys in the area recorded four cultural sites. It was concluded, however, that none of the previously recorded sites will be impacted by this project, provided the workers do not venture too far away from the proposed drill sites.

4.2.1.3 Floodplains:

The floodplain on Kanab Creek in the vicinity of the proposed drill sites is relatively narrow as the creek winds around a hill that rises over 120 feet in elevation from the creek level. The drill sites are located on the hill approximately 80 feet in elevation above the creek level, well above the floodplain. There is nothing in the proposed action that would impact the Kanab Creek floodplain.

4.2.1.4 Invasive, Non-native Species:

There are currently no invasive, non-native species on the drill sites but scotch thistle is known to be in the area. Protective measures to help minimize the threat of spreading noxious and invasive weeds, as well as, procedures for the eradication of noxious weeds resulting from the proposed action, are stipulated in the Mitigating Measures of this EA to mitigate this potential threat. Once these procedures are followed the proposed action would have negligible impact on invasive, non-native species.

4.2.1.5 Native American Religious Concerns:

Since the applicant would be providing water to the site, when water levels are low in Kanab Creek and there would be minimal land disturbance as described in the proposed action, no impacts should occur to places of importance to American Indian religious concerns.

Previous uranium exploration in the Kanab Creek vicinity led to vandalism of previously intact prehistoric sites in this region as well as illegal collection of prehistoric artifacts. Helicopters used in conjunction with previous uranium exploration and mining and four-wheel drive vehicles, also used on the projects, provided opportunities for employees to violate the provisions of the Archaeological Resources Protection Act (ARPA).

It is, therefore, crucial that employees associated with the project be informed about the provisions of ARPA and not allowed opportunities to vandalize sites and illegally collect artifacts from sites. Provided the applicant's employees stay near the proposed drill sites and the provisions of Section 106 of the National Historic Preservation Act and pertinent directives regarding consultation with Indian tribes are followed, impacts should be minimal.

4.2.1.6 Threatened, Endangered or Candidate Animal Species:

Habitat assessments indicate that potential Mexican spotted owl habitat occurs within 400 yards of the proposed drill sites and suitable southwestern willow flycatcher habitat occurs within 600 yards. Occurrence surveys indicate that neither species is present within the area at this time. Therefore, the proposed action would not likely result in adverse effects to the species. In addition, since potential unoccupied habitat for both species occurs upstream from the proposed drill sites, it is unlikely that the quality of the existing habitat would be affected by the proposed action. The BLM is in the process of obtaining written concurrence on a determination of not likely to adversely affect these species. Subsequent surveys would be conducted in accordance with protocols for both species during 2007 to determine future occupancy of the habitat areas.

Similarly, it is unlikely that California condors or bald eagles would be adversely affected by the proposed action due the fact that neither species is known to frequent the area of the proposed action. The BLM is in the process of obtaining written concurrence on a determination of not likely to adversely affect these species.

Surveys for other special status species would be conducted coincident with surveys for Mexican spotted owls and southwestern willow flycatchers. Bat surveys may also be conducted to determine use in the area by these species.

4.2.1.7 Wastes (hazardous or solid):

Hazardous wastes in the form of radioactive cutting and drill core could result from exploratory drilling for uranium. Core samples would be flown out every day or two using the same trips which bring personnel and supplies in. The core would be taken to town immediately and stored. After drilling operations are completed the cuttings would be allowed to dry and placed back into the drill holes. A scintillometer survey would then be conducted to be sure no cuttings containing uranium were left on the ground. Then the drill hole would be plugged in accordance with Arizona State requirements.

Solid wastes in the form of trash and human waste would be generated by the proposed action. The drilling contractor would be required to have trash containers on site where garbage, small discarded parts, oil cans, empty bentonite sacks, grease tubes, etc are to be deposited. These containers would be flown out when they are close to being full, or every 2-3 days, whichever comes first. The refuse would be taken to town and disposed of in a legal manner as soon as it was flown out. No refuse, liquid or solid, would be permitted to accumulate or be buried. Liquid refuse such as used oil, hydraulic fluid, antifreeze, contaminated water, or fuel would be placed in suitable containers and flown out. Any items which have outlived their usefulness, such as broken or worn out parts, empty fuel or oil drums, empty parts containers, etc would be flown out promptly and not allowed to accumulate on site.

If lubricants are drained from equipment, then a thick plastic liner would be required under the equipment to collect any spilled material. This spilled material would be drained from the liner and disposed with other petroleum based fluids. No material would be allowed to drain on the

ground. If soils or the ground are accidentally contaminated by fuels, lubricants or other hazardous materials, such materials would be removed from the public lands and disposed of at an approved disposal site. If necessary, the operator would be required to collect soil samples below the spill to assure that all hydrocarbon-contaminated soils are removed. If vegetation is contaminated, it would be collected, bagged and disposed at an approved facility.

A portable toilet would be on site at all times. A local vendor would provide portable toilets rigged to be carried by helicopter, and to deliver newly serviced ones to the helicopter landing site and haul the ones requiring servicing back to town at appropriate intervals. It would be the responsibility of the drill contractor to clean up and remove any human waste found anyplace outside of the portable toilet. Impacts from the proposed action to the project area would be short term and minor.

4.2.1.8 Water Quality (drinking/ground):

Subsurface ground water may be present in bedrock units. Ground water is present within porous, permeable strata (aquifers). Vertical migration between aquifers is retarded by impermeable strata (aquitards). The most commonly encountered aquifer (Redwall Limestone) is deeper than the units that would be encountered in the proposed action by drilling. Therefore, it is unlikely ground water would be encountered by the proposed action during drilling.

The ADWR requires drill holes that encounter water be filled with one or more of the following materials or mixtures: cement grout (including neat cement grout, cement-bentonite grout and sand-cement grout), concrete, high-solids bentonite grout (granular or powder mixtures) with a minimum of 15% solids by weight, high-solids bentonite chips, highsolids bentonite pellets, and sand-bentonite grout. These substances seal the aquifer and do not allow water to migrate in the drill hole. In the course of drilling a new well, the well may be abandoned using drill cuttings from the well being drilled if the well does not penetrate an aquifer, and no ground water contamination issues exist.

The proposed action would have negligible impacts on water quality (drinking/ground).

4.2.1.9 Wetlands/Riparian Zones:

Riparian vegetation occurs along portions of Kanab Creek, including the portion of the creek near the proposed drill sites. The drill sites are located on the hill approximately 80 feet in elevation above the creek level and above any riparian zones. The proposed action includes obtaining water from Kanab Creek to be used for drilling fluid. The removal of water from Kanab Creek could adversely impact riparian vegetation during dry periods.

The proposed action states, approximately 1400 gallons (186 cubic feet) would be needed initially to mix the drill fluid. Additional water in the amounts of a few hundred gallons may be needed from time to time if circulation is lost due to fractures or voids in the rock. Typically, the timing for this project would last a maximum of six to eight weeks. However, unforeseen delays could occur due to equipment failure or technical difficulties. The water would be pumped from the creek to a lined pit or water tank, using a small portable pump at a maximum rate of 20

gallons per minute (approximately 0.05 cfs). A total maximum amount of 3000 gallons could be removed from Kanab Creek at a maximum rate of 20 gallons per minute (approximately 0.05 cfs). If the flow of water in Kanab Creek is less than 200 gallons per minute (approximately 0.5 cfs) the operator would not be allowed to remove water from Kanab Creek and would need to obtain water from an alternative source (such as flying the water in to the drill site or a temporary water pipe line). Measurements of the flow rates at Clear Water Spring approximately 1 mile upstream from the proposed drill sites near Kanab Creek during different times of the year by the BLM have varied between 2 cfs and 20 cfs. Under ordinary circumstances it is anticipated that any impacts to riparian zones would be short term and minor.

OTHER RESOURCES/CONCERNS

4.2.1.10 Livestock Grazing:

Livestock operations would not be adversely impacted by the proposed action. Stock reservoirs, including those which may provide seasonal wildlife water, would not be impacted. The total surface disturbance associated with the proposal, including the three drill sites, helicopter landing areas, staging area, pipeline, water storage area, and equipment storage area is estimated to be 2.5 acres. The loss of forage to livestock would be insignificant and temporary.

4.2.1.11 Vegetation:

The total surface disturbance associated with the proposed action is estimated to be 2.5 acres. Some vegetation would be lost as a result of trampling and digging, however, the disturbed areas would be reclaimed.

Reclamation of the site would include contouring the location to approximate natural topography. Reclaimed areas would not be recontoured to a smooth condition, but left in a roughened condition to collect precipitation and to promote seed germination. The stockpiled topsoil would then be evenly redistributed. Immediately prior to seeding, disturbed areas would be scarified to a depth of at least 1 inch.

The seed mixture to be used would be specified by the BLM at the time of reclamation. The seed may be applied by rangeland drill or broadcast and harrow or other drag techniques as approved by the Authorized Officer. All seed used would be certified minimum 90 % pure live seed and would meet Arizona State requirements for weed free specifications. Seeding would be repeated until native vegetation attains 50% of the surrounding undisturbed cover, as determined by a method acceptable to the Authorized Officer. Reclamation efforts should re-establish grass, forb and shrub vegetation on the site in 2 to 5 years.

After reclamation a plant community similar to the one that preceded the proposed action should be re-established. Low precipitation and the nature of the soil could delay revegetation; thus, the productivity of the reclaimed surface could temporarily be less than the undisturbed surface. Eventually, natural succession should restore the plant community to its predisturbed composition.

4.2.1.12 Fish and Wildlife:

During dry periods the fish in Kanab Creek could be adversely impacted by the removal of water to be used for drilling fluid. A total maximum amount of 3000 gallons could be removed from Kanab Creek at a maximum rate of 20 gallons per minute (approximately 0.05 cfs). If the flow of water in Kanab Creek is less than 200 gallons per minute (approximately 0.5 cfs) the operator would not be allowed to remove water from Kanab Creek and would need to obtain water from an alternative source (such as flying the water in to the drill site or a temporary water pipe line).

The fish in Kanab Creek could also be adversely impacted by the discharge of petroleum products or large amounts of sediment into the creek. Drilling fluids would be mixed at the proposed drill site(s), which are a few hundred feet away from Kanab Creek, at an elevation about 80 feet above Kanab Creek. The fluids would be confined to a lined pit or cattle water tanks.

The fluids would not be allowed to drain into Kanab Creek. If lubricants are drained from equipment, then a thick plastic liner would be required under the equipment to collect any spilled material. This spilled material would be drained from the liner and disposed with other petroleum based fluids. No material would be allowed to drain on the ground. If soils or the ground are accidentally contaminated by fuels, lubricants or other hazardous materials, such materials would be removed from the public lands and disposed of at an approved disposal site. If necessary, the operator would be required to collect soil samples below the spill to assure that all hydrocarbon-contaminated soils are removed. If vegetation is contaminated, it would be collected, bagged and disposed at an approved facility.

Approximately 2.5 acres (including access above the rim and the drill sites in the canyon) of wildlife habitat would be disturbed by the proposed action. The development of drill pads would displace most wildlife species during the construction and drilling phases. Burrows of small mammals could be destroyed during the construction of the drill pads. Overall, the outright mortality of small mammals, reptiles and birds caused from construction activity would be low. The greatest impacts on these animals would be the loss of a small amount of habitat used for feeding, cover and nesting/reproduction. In effect, the animals would be forced into adjoining habitat to meet their feeding, cover and reproduction needs. Animal species would be expected to return to the area at the conclusion of operations and following revegetation.

The proposed action, as mitigated, would not substantially impact fish or wildlife.

4.2.1.13 Recreation:

The proposed action would impact recreation. Recreation activities and opportunities in the vicinity of the proposed drill sites and helicopter landing areas would be impacted in the short term, during the duration of exploration activities. The impact would be minor, as there are abundant other areas in the vicinity to enjoy recreational experiences such as horseback riding, hiking, camping, hunting, rock collecting, photography bird watching and nature study. Visitors hiking in Kanab Creek would be impacted during operations.

4.2.1.14 Visual Resources:

During drilling operations, Visual Resource Management (VRM) Class II objectives would be exceeded. High visual contrast would result from the presence of a vertical-oriented drill rig structure. Impacts to nightsky conditions could occur if drilling operations are 24-hours. After drilling the eventual success of reclamation efforts proposed for the site would achieve VRM Class II objectives for the long-term.

4.2.1.15 Geology/Mineral Resources/Energy Production:

Geology, mineral resources and energy production could be impacted. There would be an increase of information and knowledge regarding geology and mineral resources. Long term benefits for energy production could result if uranium ore bodies are discovered.

4.2.1.16 Socio-economics:

Impacts to socio-economics could occur. Minor short term socio-economic benefits could result from the proposed action. Locally, some employment opportunities could arise related to uranium exploration.

4.2.1.17 Wilderness Characteristics:

The proposed action would have short-term impacts on wilderness characteristics. The proposed action includes transporting the drill, equipment, supplies and personnel from a helicopter landing pad on top of the canyon rim to the proposed drill sites near Kanab Creek. Typically, the timing for this project would last a maximum of six to eight weeks. However, unforeseen delays could occur due to equipment failure or technical difficulties. Naturalness, solitude, and primitive recreation would be adversely impacted by these activities. These impacts would occur while operations are being conducted after which, and following reclamation, the wilderness characteristics of the area would be restored.

4.2.1.18 Mitigation Measures:

The following mitigating measures would be included as conditions of approval for the proposed action:

1. (a) Any surface, or sub-surface archaeological, historical, or paleontological remains not covered by the CRPR discovered during preparation or actual work shall be left intact; all work in the area would stop immediately and the Authorized Officer shall be notified. Commencement of work would be allowed upon clearance by the Authorized Officer in consultation with the Archaeologist.

   (b) An additional archaeological survey would be required in the event the proposed project location is changed, or additional surface disturbing activities are added to the project after the initial survey. Any such survey would have to be completed prior to commencement, or continuation of the project.

(c) If in connection with this work any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the operator would stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer. The operator would continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

2. The proposed action would take place between September and March to avoid disturbance during breeding season for Mexican spotted owls and southwestern willow flycatchers. Preparation activities on top of the canyon rim could take place outside the September-March window.

3. The operator shall notify the BLM wildlife team lead or condor biologist if California condors visit the worksite while exploration activities are underway. The operator is encouraged to modify, relocate, or delay project activities where adverse affects to condors may result.

4. A total maximum amount of 3000 gallons could be removed from Kanab Creek at a maximum rate of 20 gallons per minute (approximately 0.05 cfs). If the flow of water in Kanab Creek is less than 200 gallons per minute (approximately 0.5 cfs) the operator would not be allowed to remove water from Kanab Creek and would need to obtain water from an alternative source (such as flying the water in to the drill site or a temporary water pipe line from above the rim). Any water and/or drill fluid contained pits/ponds would be covered with bird netting when not in use to prevent wildlife from accessing the ponds.

5. There is potential for the spread of noxious and invasive weeds from drill equipment contaminated with weed seed and/or biomass as well as coming in from the surrounding area and being able to get started because of the disturbance. To reduce this potential, the BLM shall require the following measures be taken: The operator would thoroughly power wash and remove all vegetative material and soil before transporting equipment to the drill site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery. The operator shall be responsible for the eradication of noxious weeds on disturbed areas within the limits of the drill sites. The operator shall be responsible for consultation with the Authorized Officer and local authorities for implementing acceptable weed treatment methods. Any use of chemical treatments would be made using only chemicals approved in BLM's EIS, and only after completing and getting a signed pesticide use proposal (PUP) from the BLM. A state certified applicator shall complete the treatment and would abide by all safety and application guidelines as listed on the product label and Material Data Safety Sheet (MSDS).

6. The operator shall be required to have trash containers on site where refuse, garbage, small discarded parts, oil cans, empty sacks, grease tubes, etc… are to be deposited.

These containers would be flown out when they are close to being full, or every 2-3 days, whichever comes first. The refuse shall be taken to town and disposed of in a legal manner as soon as it is flown out. No refuse, liquid or solid, would be permitted to accumulate or be buried. Liquid refuse such as used oil, hydraulic fluid, antifreeze, contaminated water, or fuel would be placed in suitable containers and flown out. Any items which have outlived their usefulness, such as broken or worn out parts, empty fuel or oil drums, empty parts containers, etc… would be flown out promptly and not allowed to accumulate on site. At the termination of the project the pipeline and anything related to it would be removed.

7. If lubricants are drained from equipment, then a thick plastic liner would be required under the equipment to collect any spilled material. This spilled material would be drained from the liner and disposed with other petroleum based fluids. No material shall be allowed to drain on the ground. If soils or the ground are accidentally contaminated by fuels, lubricants or other hazardous materials, such materials would be removed from the public lands and disposed of at an approved disposal site. If necessary, the operator shall be required to collect soil samples below the spill to assure that all hydrocarbon-contaminated soils are removed. If vegetation is contaminated, it would be collected, bagged and disposed at an approved facility.

8. A portable toilet would be on site at all times. A local vendor shall provide portable toilets rigged to be carried by helicopter, and to deliver newly serviced ones to the helicopter landing site and haul the ones requiring servicing back to town at appropriate intervals. It shall be the responsibility of the operator to clean up and remove any human waste found anyplace outside of the portable toilet.

9. After drilling operations are completed the cuttings shall be allowed to dry and placed back into the drill holes. Temporary plugs would be placed in the drill holes while waiting for the cuttings to dry. After placing the cuttings back into the drill holes the drill holes would be plugged in accordance with Arizona State requirements. The plastic liner would be removed and the pit would be filled in by hand. A scintillometer survey would be run to be sure no cuttings containing uranium are left on the ground. Any excess cuttings not containing uranium would be raked out into a thin layer and blended with the surrounding soils to minimize visual contrast. Then the disturbed ground would be graded to a natural appearing contour and seeded with a BLM prescribed mixture.

10. Reclamation of the site would include contouring the location to approximate natural topography. Reclaimed areas would not be recontoured to a smooth condition, but left in a roughened condition to collect precipitation and to promote seed germination. The stockpiled topsoil would then be evenly redistributed. Immediately prior to seeding, disturbed areas would be scarified to a depth of at least 1 inch. The seed mixture to be used would be specified by the BLM at the time of reclamation. The seed may be applied by rangeland drill or broadcast and harrow or other drag techniques as approved by the Authorized Officer. All seed used shall be certified minimum 90 % pure live seed and shall meet Arizona State requirements for weed free specifications. Seeding would be

repeated until native vegetation attains 50% of the surrounding undisturbed cover, as determined by a method acceptable to the Authorized Officer.

11. In light of Native American religious concerns (4.2.1.5) about past impacts from previous uranium activities, the operator shall ensure compliance by all of its employees, agents, or contractors with laws designed to protect cultural resources and to respect American Indian Religious concerns. The operator shall inform those involved in the drilling activities of these laws and closely supervise them. The operator would be held responsible if any of their employees, agents, or contractors violate these laws.

4.2.1.19 Residual Impacts:

No residual impacts would remain after the application of all mitigation measures and operating standards.

4.2.1.20 Monitoring and/or Compliance:

Monitoring and compliance inspections would be conducted under the 43 CFR 3809 regulations. Current policy dictates an inspection be made prior to the beginning of operations. Inspections are also made during and immediately after reclamation of the site. Thereafter, inspections are conducted at least twice a year until adequate vegetation is established on the disturbed areas. No other monitoring is required.

4.3 Cumulative Impacts Analysis:

"Cumulative impacts" are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.3.1 Past and Present Actions:

Past or ongoing actions that affect the same components of the environment as the proposed action are:

During the 1980s extensive uranium exploration was conducted on the ASFO with more than 1200 drill holes documented (refer to the RMP). Since the mid 1990s there has been little or no uranium exploration conducted on lands administered by the ASFO.

In the last year and a half there has been a significant increase in mining-related activities on lands managed by the ASFO. A surge in the number of mining claims staked for uranium began in February 2004 and rapidly accelerated between September 2004 and January 2005. This trend has continued with at least one company using helicopters to stake claims on the ground. Between February 2004 and July 2006 there have been approximately 2500 new mining claims located for uranium on the ASFO. This recent activity reflects a 23 year high in the price of uranium.

Since September 2005, uranium exploration companies have submitted four notices, as amended, and one plan of operation for exploratory drilling. Between 100 and 150 drill holes have been proposed.

International Uranium Corp. (IUC) owns three existing uranium mines on the Arizona Strip which have been on "care and maintenance" status since the price of uranium fell in the early 1990s. The Kanab North, Pinenut and Arizona 1 mines are expected to reopen in the foreseeable future. Through 1990, when mining for uranium on the ASFO previously ceased, production had totaled 1.472 million tons of ore from five mines with an average grade of 0.647% U_3O_8 containing 19.04 million pounds of U_3O_8.

4.3.2 Reasonably Foreseeable Action Scenario

The following reasonably foreseeable action scenario identifies the reasonably foreseeable future actions that would cumulatively affect the same resources in the cumulative impact area as the proposed action.

Assuming there will be no major regulatory changes in federal or state statutes, regulations, policy, or guidance that govern the exploration and development of locatable minerals and commodity prices in the future will provide sufficient economic incentive to support the production of locatable mineral commodities, the level of activity analyzed in Appendix 28, Impacts from Reasonably Foreseeable Locatable Mineral Resource Exploration and Development, RMP, is anticipated to continue.

In the RMP, it is assumed that uranium exploration would continue in areas showing high favorability of occurrence and that during the life of the plan 740 total acres would be disturbed and reclaimed by uranium exploration. Additionally, 550 acres would be disturbed and reclaimed during mine development. Presently, about 450 acres have been disturbed by uranium exploration and 150 acres by the development of uranium mines. The majority of these disturbances have been successfully reclaimed. There are approximately 15 acres related to recent exploration notices that have not been reclaimed and the three mines on “care and maintenance” encompass about 60 acres.

4.3.3 Cumulative Impacts:

It has been determined that cumulative impacts would be negligible as a result of the proposed action because reclamation or complete rehabilitation of any disturbances resulting from the proposed action is required by the 43 CFR 3809 regulations.

Complete rehabilitation of a disturbance generally takes from five to ten years. A site is determined by the BLM to be completely rehabilitated when disturbed areas are graded to a natural appearing contour and all foreign debris removed. In addition the vegetation on the disturbed site must attain the density and variety of the vegetation in the surrounding undisturbed area.

If an economic deposit of uranium is discovered in the drill target mine the most practical way of exploiting it would be to sink a shaft on the level ground either east or west of Kanab Canyon and drive a horizontal drift to intersect the pipe just below the bottom of the lowest ore. This approach was used successfully at the Kanab North Mine. At the Rock Claims the horizontal distance from a suitable shaft site to the pipe is 2400-3000 feet on either side of the canyon. The level ground west of the canyon is over 200 feet lower in elevation than comparable areas on the east side due to displacement along the Kanab Creek Fault. A drift from the east side would have to go through the Kanab Creek Fault, possibly resulting in problems with broken ground and infiltrating water. Thus, at first evaluation, it appears that west side of the canyon would be the better location for any mine facilities.

Mine development is beyond the scope of this EA.

5.0 CONSULTATION AND COORDINATION:

5.1 Introduction:

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The issues identified through the public and agency involvement processes are described in sections 5.2 and 5.3 below.

5.2 Persons, Groups, and Agencies Consulted:

Gloria Benson, Native American Coordinator
Tom Folks, Recreation/Wilderness/VRM
Laurie Ford, Lands/Realty/Minerals
Becky Hammond, Field Manager
Michael Herder, Wildlife/ T&E
John Herron, Cultural
Lee Hughes, Special Status Plants
Ray Klein, GCPNM Supervisory Ranger
Linda Price, S&G
Bob Sandberg, Range/Vegetation
Richard Spotts, Environmental Coordinator
Ron Wadsworth, Supervisory Law Enforcement
LD Walker, Weed Coordinator

Rick Miller, Arizona Game and Fish Department
Andi Rogers, Arizona Game and Fish Department

5.3 Summary of Public Participation:

A Notice of Availability Letter was sent out on September 8, 2006, to the parties on the ASFO NEPA mailing list and to others who have requested only copies of EAs for mining/minerals and wilderness/monuments/acecs. The EA has been posted on the Arizona Strip District Office's web page for a public review and comment period.

5.3.1 Comment Analysis:

IN DRAFT

5.3.2 List of Commenters:

IN DRAFT

5.3.3 Response to Public Comment:

IN DRAFT

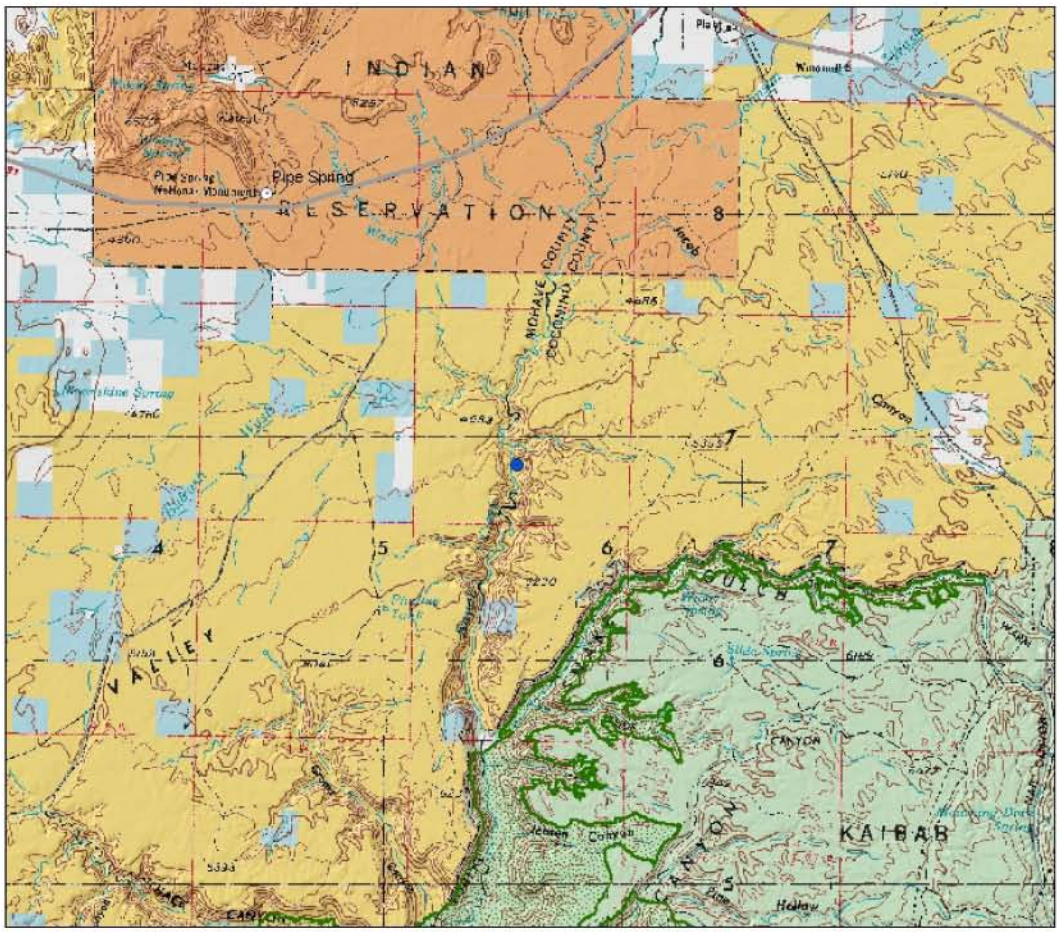
5.4 List of Preparers:

IN DRAFT

APPENDIX 1

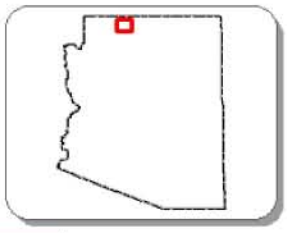
GENERAL LOCATION MAP OF QUATERRA'S ROCK CLAIMS EXPLORATION TARGET

Arizona Strip Field Office



Legend

- Quaterra's Exploration Target
- Bureau of Land Management
- National Park Service
- National Forest
- State Lands
- National Recreation Area
- National Forest Wilderness
- Private Lands
- Indian Lands
- Military Reservation



1:250,000

United States Department of the Interior
Bureau of Land Management
Arizona Strip Field Office

Map created on May 12, 2006

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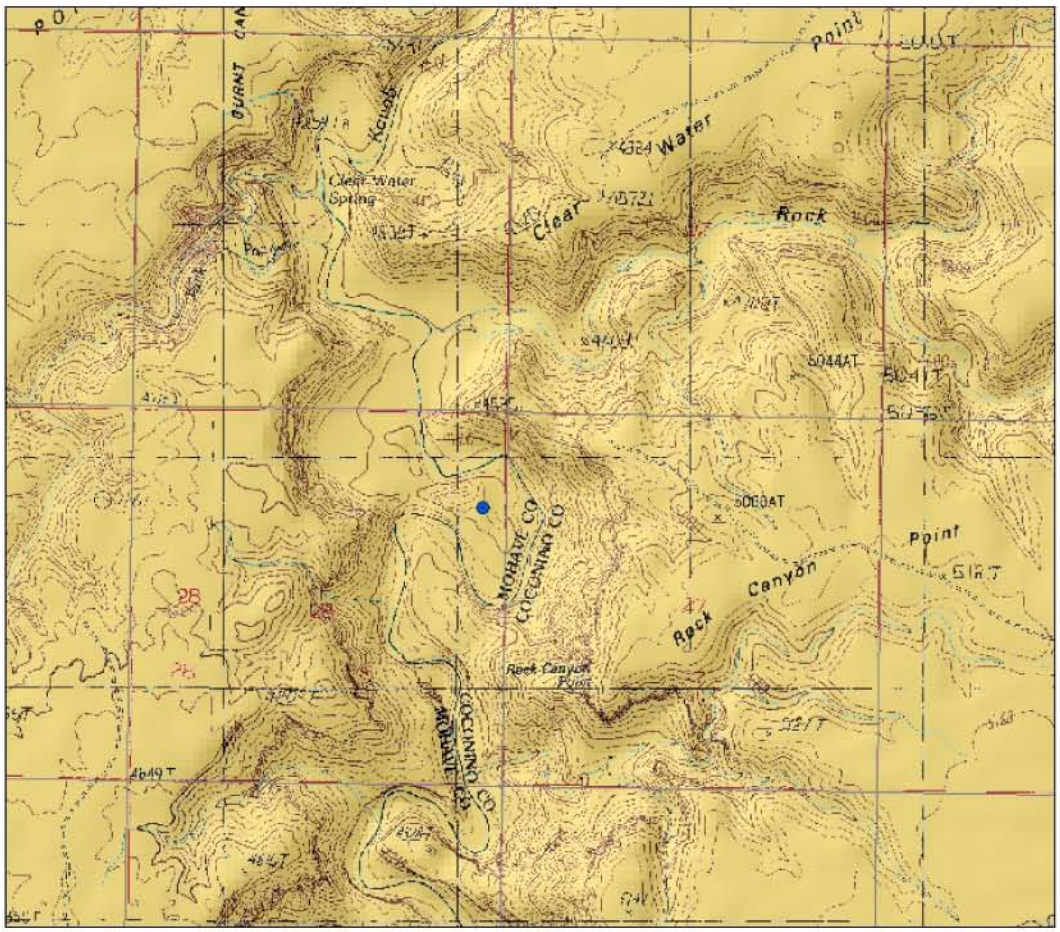
CAUTION:
Land ownership data is derived from less accurate data than the 1:24000 scale base map. Therefore, land ownership may not be shown for parcels smaller than 40 acres, and land ownership lines may have plotting errors due to source data.

No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the BLM.

APPENDIX 2

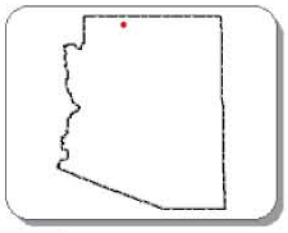
DETAILED LOCATION MAP OF QUATERRA'S ROCK CLAIMS EXPLORATION TARGET

Arizona Strip Field Office



Legend

- Quaterra's Exploration Target
- Bureau of Land Management
- National Park Service
- National Forest
- State Lands
- National Recreation Area
- National Forest Wilderness
- Private Lands
- Indian Lands
- Military Reservation



1:24,000

United States Department of the Interior
Bureau of Land Management
Arizona Strip Field Office

Map created on May 12, 2006

N W E S

CAUTION:
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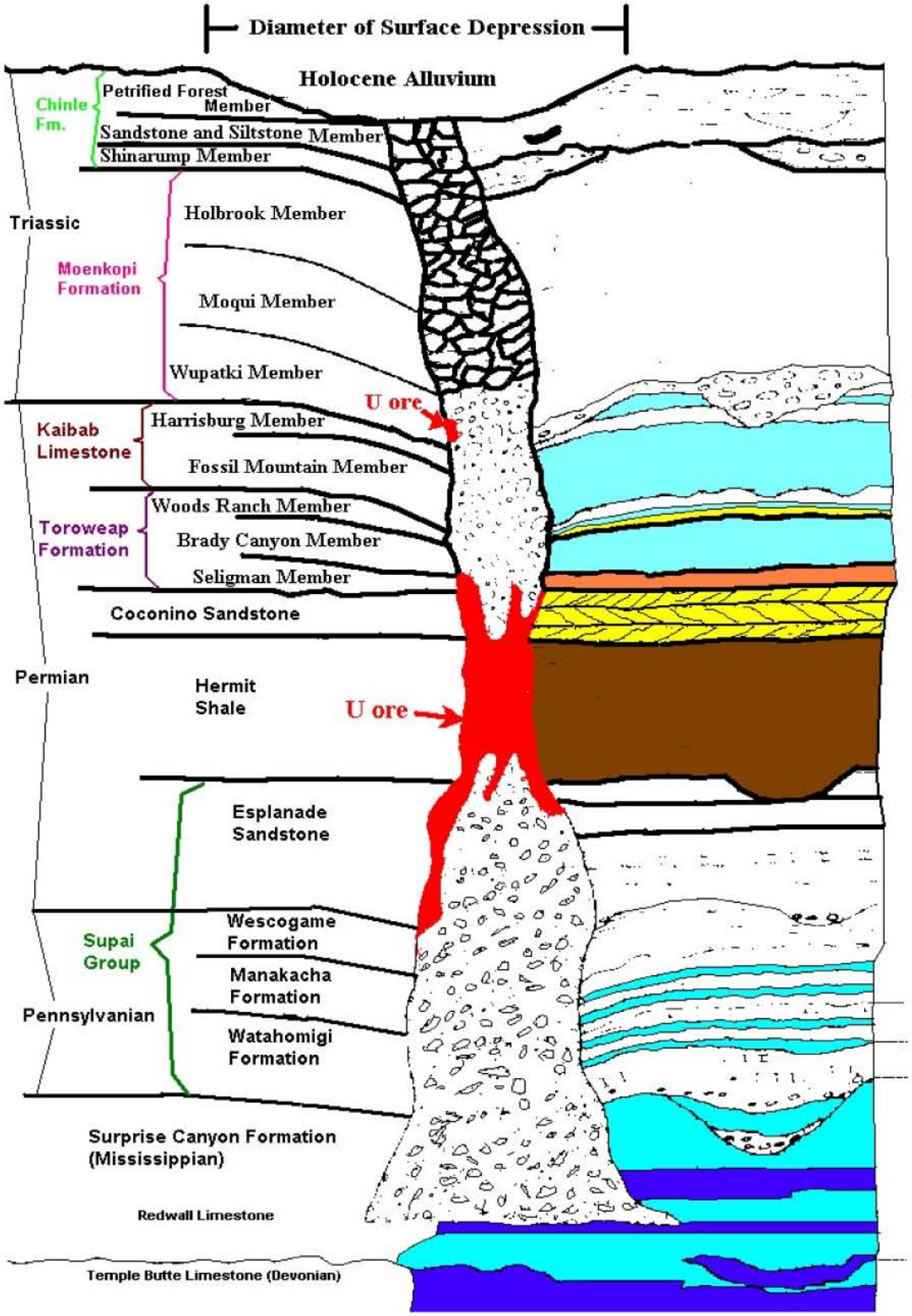
APPENDIX 3

Generalized Cross Section of a Breccia Pipe



FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION RECORD

Quaterra Resources, Inc., Uranium Exploration on the Rock Mining Claims
EA-AZ-110-06-0043

FINDING OF NO SIGNIFICANT IMPACT: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the action will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

DECISION: It is my decision to authorize Quaterra Resources, Inc. (Quaterra), to drill three to six core holes, from a maximum of three drill pads, on Rock #1 and Rock #2, (AMC 366091-2) unpatented lode mining claims in the NE¼ of Section 28, T. 39 N., R. 3 W, G&SRM, as described in the proposed action of EA-AZ-110-06-0043. These lands are in Mohave County, Arizona.

All exploration and related activities must be carried out in conformance with 43 CFR 3809 regulations. This decision is contingent on compliance with the mitigation measures or stipulations below. Adherence to these stipulations and State of Arizona regulations is mandatory. Compliance with these stipulations will insure that negative impacts to the environment and other resource values will be mitigated.

STIPULATIONS:

1. (a) Any surface, or sub-surface archaeological, historical, or paleontological remains not covered by the CRPR discovered during preparation or actual work shall be left intact; all work in the area will stop immediately and the Authorized Officer shall be notified. Commencement of work will be allowed upon clearance by the Authorized Officer in consultation with the Archaeologist.

   (b) An additional archaeological survey will be required in the event the proposed project location is changed, or additional surface disturbing activities are added to the project after the initial survey. Any such survey will have to be completed prior to commencement, or continuation of the project.

   (c) If in connection with this work any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the operator shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer. The operator will continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

2. The proposed action will take place between September and March to avoid disturbance during breeding season for Mexican spotted owls and southwestern willow flycatchers. Preparation activities on top of the canyon rim could take place outside the September-March window.

3. The operator shall notify the BLM wildlife team lead or condor biologist if California condors visit the worksite while exploration activities are underway. The operator is encouraged to modify, relocate, or delay project activities where adverse affects to condors may result.

4. A total maximum amount of 3000 gallons could be removed from Kanab Creek at a maximum rate of 20 gallons per minute (approximately 0.05 cfs). If the flow of water in Kanab Creek is less than 200 gallons per minute (approximately 0.5 cfs) the operator will not be allowed to remove water from Kanab Creek and will need to obtain water from an alternative source (such as flying the water in to the drill site or a temporary water pipe line from above the rim). Any water and/or drill fluid contained pits/ponds will be covered with bird netting when not in use to prevent wildlife from accessing the ponds.

5. There is potential for the spread of noxious and invasive weeds from drill equipment contaminated with weed seed and/or biomass as well as coming in from the surrounding area and being able to get started because of the disturbance. To reduce this potential, the BLM requires the following measures be taken: The operator will thoroughly power wash and remove all vegetative material and soil before transporting equipment to the drill site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery. The operator shall be responsible for the eradication of noxious weeds on disturbed areas within the limits of the drill sites. The operator shall be responsible for consultation with the Authorized Officer and local authorities for implementing acceptable weed treatment methods. Any use of chemical treatments will be made using only chemicals approved in BLM's EIS, and only after completing and getting a signed pesticide use proposal (PUP) from the BLM. A state certified applicator shall complete the treatment and will abide by all safety and application guidelines as listed on the product label and Material Data Safety Sheet (MSDS).

6. The operator shall be required to have trash containers on site where refuse, garbage, small discarded parts, oil cans, empty sacks, grease tubes, etc… are to be deposited. These containers will be flown out when they are close to being full, or every 2-3 days, whichever comes first. The refuse shall be taken to town and disposed of in a legal manner as soon as it is flown out. No refuse, liquid or solid, will be permitted to accumulate or be buried. Liquid refuse such as used oil, hydraulic fluid, antifreeze, contaminated water, or fuel will be placed in suitable containers and flown out. Any items which have outlived their usefulness, such as broken or worn out parts, empty fuel or oil drums, empty parts containers, etc… will be flown out promptly and not allowed to accumulate on site. At the termination of the project the pipeline and anything related to it will be removed.

7. If lubricants are drained from equipment, then a thick plastic liner will be required under the equipment to collect any spilled material. This spilled material will be drained from the liner and disposed with other petroleum based fluids. No material shall be allowed to drain on the ground. If soils or the ground are accidentally contaminated by fuels, lubricants or other hazardous materials, such materials will be removed from the public lands and disposed of at an approved disposal site. If necessary, the operator shall be required to collect soil samples below the spill to assure that all hydrocarbon-contaminated soils are removed. If vegetation is contaminated, it will be collected, bagged and disposed at an approved facility.

8. A portable toilet will be on site at all times. A local vendor shall provide portable toilets rigged to be carried by helicopter, and to deliver newly serviced ones to the helicopter landing site and haul the ones requiring servicing back to town at appropriate intervals. It shall be the responsibility of the operator to clean up and remove any human waste found anyplace outside of the portable toilet.

9. After drilling operations are completed the cuttings shall be allowed to dry and placed back into the drill holes. Temporary plugs will be placed in the drill holes while waiting for the cuttings to dry. After placing the cuttings back into the drill holes the drill holes will be plugged in accordance with Arizona State requirements. The plastic liner will be removed and the pit will be filled in by hand. A scintillometer survey shall be run to be sure no cuttings containing uranium are left on the ground. Any excess cuttings not containing uranium will be raked out into a thin layer and blended with the surrounding soils to minimize visual contrast. Then the disturbed ground will be graded to a natural appearing contour and seeded with a BLM prescribed mixture.

10. Reclamation of the site will include contouring the location to approximate natural topography. Reclaimed areas will not be recontoured to a smooth condition, but left in a roughened condition to collect precipitation and to promote seed germination. The stockpiled topsoil will then be evenly redistributed. Immediately prior to seeding, disturbed areas will be scarified to a depth of at least 1 inch. The seed mixture to be used will be specified by the BLM at the time of reclamation. The seed may be applied by rangeland drill or broadcast and harrow or other drag techniques as approved by the Authorized Officer. All seed used shall be certified minimum 90 % pure live seed and shall meet Arizona State requirements for weed free specifications. Seeding will be repeated until native vegetation attains 50% of the surrounding undisturbed cover, as determined by a method acceptable to the Authorized Officer.

11. In light of Native American religious concerns (4.2.1.5) about past impacts from previous uranium activities, the operator shall ensure compliance by all of its employees, agents, or contractors with laws designed to protect cultural resources and to respect American Indian Religious concerns. The operator shall inform those involved in the drilling activities of these laws and closely supervise them. The operator will be held responsible if any of their employees, agents, or contractors violate these laws.

MONITORING: Surface activities will be monitored by the BLM Arizona Strip Field Office. The BLM Arizona Strip Field Office and the State of Arizona will monitor compliance with drilling and plugging requirements.

RATIONAL: This decision is in conformance with the Arizona Strip District Resource Management Plan and Final Environmental Impact Statement (1992), as amended (1998); and the Shivwits Resource Area Implementation Plan for the Arizona Strip District Approved Resource Management Plan (1992). In addition, this area is open to the mining law with a plan of operation.

Exploration and development of locatable mineral resources are provided for by the Mining Law of 1872, as amended. 43 CFR 3809 provides for mineral exploration and development while assuring that activities are conducted in a manner that prevents unnecessary or undue degradation, provides protection of non-mineral resources, and provides for reclamation of disturbed areas. This decision and the action it authorizes are in conformance with this legal and regulatory framework.

No significant adverse environmental impacts resulting from implementation of this proposed action were identified in EA-AZ-110-06-0043. This EA provided for mitigation of potential adverse impacts to resource values.

_____ _____

Becky J. Hammond Date of signature
Field Manager